

02/21/14 Agenda

- Intro to Chapter 7 - Exponents
- Assignment Sheets
- Section 7.2 day 1 - Multiplying Powers
- Homework
 - Worksheet 7.2 day 1 - Multiplying Exponents

Section 7.2 - Multiplying Powers (Integer Exponents)

Target 7A

February 21, 2014

Goal:

Be able to use the properties of multiplying powers with the same base.

Vocabulary:
What is an "exponent"?

Exponent $7^3 = 7 \cdot 7 \cdot 7 = 343$
Base

1) $3^5 \cdot 3^3$ Exponential Form Expanded Form
 $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$
 $3^{5+3} = 3^8$ 3375

2) $(-2)^3 \cdot (-2)^2$ $(-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2)$
 $(-2)^{3+2} = (-2)^5$

Is there an easier way? How do you simplify multiplication with the same base and exponents?

ADD THEM!

Examples:

Rewrite each expression using the same base.

3) $6^4 \cdot 6^2 \cdot 6^3$ $4+2+3=9$ 6^9
 4) $b^2 \cdot b^3$ $2+3=5$ b^5

5) $h^5 \cdot h^2 \cdot h^{10}$ $5+2+10=17$ h^{17}

What if there are coefficients?

Example:

$$2a \cdot 9b^4 \cdot 3a^2$$

$$2 \cdot a \cdot 9 \cdot b \cdot b \cdot b \cdot b \cdot 3 \cdot a \cdot a$$

$$2 \cdot 9 \cdot 3 \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b$$

$$54 a^3 b^4$$

$$54a^3b^4$$

Multiply the coefficients.
Add the exponents of "like" bases.

Examples:

Rewrite each expression using the same base.

$$8k^3 \cdot 3k^6 \quad 3+6=9 \quad (16r^7)(-2r^1) \quad 7+1=8$$

$$24k^9 \quad -32r^8$$

$$-6j^3k \cdot 7jk^5 \quad (15fg^2)(f^4g^3)(-8fg^6)$$

$$-42j^4k^6 \quad -120f^6g^{11}$$

$$(2x^2) * (x^3) * (3x^5)$$

$$1.) 8k^3 \cdot 3k^6 \quad 2.) (16r^7)(-2r^2)$$

$$24k^9 \quad -32r^9$$

$$3.) -6j^3k \cdot 7jk^5 \quad 4.) (15fg^2)(f^4g^3)(-8fg^6)$$

$$-6 \cdot 7 j^{3+1} k^{1+5} \quad -120 f^{1+4+1} g^{2+3+6}$$